

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

Listing of Claims.

1.-22. (Cancelled)

23. (Currently Amended) A polishing medium for chemical-mechanical polishing, comprising:

an oxidizing agent for a conductor;

a protective-film-forming agent for protecting a metal surface;

an acid; and

water, ~~not comprising~~ wherein:

said polishing medium does not include abrasive grains, gains, wherein:

said polishing medium has a pH of 3 or less, and

said oxidizing agent is in a concentration of from 0.01% by weight to 3% by weight.

24. (Currently Amended) The polishing medium for chemical-mechanical polishing, comprising:

an oxidizing agent for a conductor;

a protective-film-forming agent for protecting a metal surface;

an acid;

water; and

abrasive grains~~[[;]], wherein:~~

~~said abrasive grains are colloidal silica or colloidal alumina,~~

~~said abrasive grains have~~ polishing medium ~~has~~ a pH of 3 or less; and

~~said [[an]] oxidizing agent is in a concentration of from 0.01% by weight to 3% by weight.~~

25. (Currently Amended) The polishing medium for chemical-mechanical polishing according to claim 24, wherein:

said abrasive grains have [[a]] an average particle diameter of 50 nm or less, and said abrasive grains have standard deviation of particle size distribution in a value of more than 5 nm. [[.]]

26. (Previously Presented) The polishing medium for chemical-mechanical polishing according to claim 24, wherein said abrasive grains are mixed in an amount of from 0.1% by weight to 5% by weight.

27. (Previously Presented) The polishing medium for chemical-mechanical polishing according to claim 24, which further comprises a water-soluble polymer.

28. (Currently Amended) The polishing medium for chemical-mechanical polishing according to claim 27, wherein said water-soluble polymer is at least one selected from the group consisting of polyacrylic acid, a polyacrylic acid salt, polymethacrylic acid, a polymethacrylic acid salt, polyamic acid, a polyamic acid salt, polyacrylamide, polyvinyl alcohol and polyvinylpyrrolidone.

29. (Previously Presented) The polishing medium for chemical-mechanical polishing according to claim 27, wherein said oxidizing agent is in a concentration of from 0.01% by weight to 1.5% by weight.

30. (Previously Presented) The polishing medium for chemical-mechanical polishing according to claim 24, wherein said acid is an organic acid.

31. (Previously Presented) The polishing medium for chemical-mechanical polishing according to claim 30, wherein said acid is at least one selected from malonic acid, malic acid, tartaric acid, glycolic acid and citric acid.

32. (Previously Presented) The polishing medium for chemical-mechanical polishing according to claim 24, wherein said protective-film-forming agent is at least one selected from benzotriazole and a derivative thereof.

33. (Currently Amended) The polishing medium for chemical-mechanical polishing according to claim 24, wherein said oxidizing agent is selected from the group consisting of hydrogen peroxide, nitric acid, potassium periodate, ~~hypochlorous~~ hypochlorous acid and ozone water.

34. (Currently Amended) The polishing medium for chemical-mechanical polishing according to claim 24, wherein said conductor contains at ~~[[lest]]~~ least one of copper, a copper alloy, a copper oxide and a copper alloy oxide.

35. (Previously Presented) The polishing medium for chemical-mechanical polishing according to claim 24, wherein said conductor is a barrier layer for preventing copper atoms from diffusing.

36. (Previously Presented) The polishing medium for chemical-mechanical polishing according to claim 35, wherein said barrier layer contains tantalum, a tantalum alloy or a tantalum compound.

37. (Previously Presented) As polishing condition, polishing pressure is 25 kPa and relative speed of substrate member to polishing platen is 18 m/minute, a polishing medium for chemical-mechanical polishing having:

a polishing-rate ratio (Ta/Cu) between tantalum and copper or a copper alloy of more than 1;

a polishing-rate ratio (TaN/Cu) between tantalum nitride and copper or a copper alloy of more than 1;

a polishing-rate ratio (Ta/SiO_2) between tantalum and silicon dioxide of more than 10; and

a polishing-rate ratio (TaN/SiO_2) between tantalum nitride and silicon dioxide film of more than 10.

38. (Currently Amended) As polishing condition, polishing pressure is 25 kPa and relative speed of substrate member to polishing platen is 18 m/minute, the polishing medium for chemical-mechanical polishing according to claim 23, which has:

a polishing-rate ratio (Ta/Cu) between tantalum and copper or a copper alloy of more than 1;

a polishing-rate ratio (TaN/Cu) between tantalum nitride and copper or a copper alloy of more than 1;

a polishing-rate ratio (~~Ta/SiO_2~~) (Ta/SiO_2) between tantalum and silicon dioxide of more than 10; and

a polishing-rate ratio (TaN/SiO_2) between tantalum nitride and silicon dioxide film of more than 10.

39. (Previously Presented) A method of polishing a substrate member comprising a step of polishing a barrier layer containing tantalum, a tantalum alloy or a tantalum compound, by the use of the polishing medium for chemical-mechanical

polishing according to claim 38.

40. (Previously Presented) A method of polishing a substrate member comprising a step of polishing a surface including a wiring layer and a barrier layer, by the use of the polishing medium for chemical-mechanical polishing according to claim 38.

41. (New) The polishing medium for chemical-mechanical polishing according to claim 24, wherein said abrasive grains are made of colloidal silica or colloidal alumina.

42. (New) The polishing medium for chemical-mechanical polishing according to claim 23, which further comprises a water-soluble polymer.

43. (New) The polishing medium for chemical-mechanical polishing according to claim 42, wherein said water-soluble polymer is at least one selected from the group consisting of polyacrylic acid, a polyacrylic acid salt, polymethacrylic acid, a polymethacrylic acid salt, polyamic acid, a polyamic acid salt, polyacrylamide, polyvinyl alcohol and polyvinylpyrrolidone.

44. (New) The polishing medium for chemical-mechanical polishing according

to claim 42, wherein said oxidizing agent is in a concentration of from 0.01% by weight to 1.5% by weight.

45. (New) The polishing medium for chemical-mechanical polishing according to claim 23, wherein said acid is an organic acid.

46. (New) The polishing medium for chemical-mechanical polishing according to claim 45, wherein said acid is at least one selected from malonic acid, malic acid, tartaric acid, glycolic acid and citric acid.

47. (New) The polishing medium for chemical-mechanical polishing according to claim 23, wherein said protective-film-forming agent is at least one selected from benzotriazole and a derivative thereof.

48. (New) The polishing medium for chemical-mechanical polishing according to claim 23, wherein said oxidizing agent is selected from the group consisting of hydrogen peroxide, nitric acid, potassium periodate, hypochlorous acid and ozone water.

49. (New) The polishing medium for chemical-mechanical polishing according to claim 23, wherein said medium has a pH of 2.49 to 2.95.

50. (New) The polishing medium for chemical-mechanical polishing according to claim 24, wherein said medium has a pH of 2.49 to 2.95.

51. (New) As polishing condition, polishing pressure is 25 kPa and relative speed of substrate member to polishing platen is 18 m/minute, the polishing medium for chemical-mechanical polishing according to claim 24, which has:

a polishing-rate ratio (Ta/Cu) between tantalum and copper or a copper alloy of more than 1;

a polishing-rate ratio (TaN/Cu) between tantalum nitride and copper or a copper alloy of more than 1;

a polishing-rate ratio (Ta/SiO₂) between tantalum and silicon dioxide of more than 10; and

a polishing-rate ratio (TaN/SiO₂) between tantalum nitride and silicon dioxide film of more than 10.

52. (New) A method of polishing a substrate member comprising a step of polishing a barrier layer containing tantalum, a tantalum alloy or a tantalum compound, by the use of the polishing medium for chemical-mechanical polishing according to claim 51.

53. (New) A method of polishing a substrate member comprising a step of polishing a surface including a wiring layer and a barrier layer, by the use of the polishing medium for chemical-mechanical polishing according to claim 51.

54. (New) The polishing medium for chemical-mechanical polishing according to claim 23, wherein said oxidizing agent has a pH of 0.15 to 3.

55. (New) The polishing medium for chemical-mechanical polishing according to claim 23, wherein said oxidizing agent has a pH of 0.15 to 1.5.

56. (New) The polishing medium for chemical-mechanical polishing according to claim 24, wherein said oxidizing agent has a pH of 0.15 to 3.

57. (New) The polishing medium for chemical-mechanical polishing according to claim 24, wherein said oxidizing agent has a pH of 0.15 to 1.5.

58. (New) A method of polishing a member, by the use of the polishing medium for chemical-mechanical polishing according to claim 37.